

AMENDMENTS TO THE CLAIMS

Please amend claims 1-4 and 13-20, cancel claims 21-25 and add new claims 26-29, as shown below. A complete listing of the claims, including their current status, is set forth below.

1. **(Currently amended)** A method of making a plurality of microbar encoders, the microbar encoders having a characteristic detectable signal and capable of linking to a probe molecule, comprising:

(a) **producing a multi-layered structure** ~~depositing one or more layers unsupported by a template~~, each layer **of said structure** comprising a transducing material, and

(b) dividing the **multi-layered structure** ~~deposited layers~~ into the plurality of microbar encoders, wherein the plurality of microbar encoders have ~~substantially identical~~ **a characteristic detectable signal** ~~signals~~.

2. **(Currently amended)** The method of claim 1, wherein the method further comprises:

(c) detaching the **plurality of** microbar encoders from ~~the~~ **a** substrate.

3. **(Currently amended)** The method of claim 2, wherein the method further comprises, ~~prior to depositing the one or more layers in the stack~~, depositing a removable layer directly onto the substrate and, after dividing the **multi-layered structure** ~~stacked layers~~, removing the removable layer from the substrate, wherein removing the removable layer frees the **plurality of** microbar encoders.

4. **(Withdrawn)** The method of claim 1, wherein the **multi-layered substrate is produced** ~~layers are deposited by coextrusion~~.

5. **(Original)** The method of claim 1, wherein the transducing material produces the characteristic detectable signal by electromagnetic emission or absorption.

6. **(Withdrawn)** The method of claim 1, wherein the transducing material is selected from the group consisting of an organic dye, an inorganic phosphor, a metal-organic phosphor, a fluorescent dye, a pigment, a scattering or absorbing powder, a three-dimensional photoluminescent dendrimer molecule, and combinations thereof.

7. **(Original)** The method of claim 1, wherein the transducing material is a quantum dot.

8. **(Original)** The method of claim 1, wherein the probe molecule is capable of binding with a target molecule.

9. **(Original)** The method of claim 8, wherein the probe molecule or the target molecule comprises a biological molecule.

10. **(Original)** The method of claim 9, wherein the biological molecule comprises a nucleic acid molecule.

11. **(Withdrawn)** The method of claim 9, wherein the biological molecule comprises a monoclonal or polyclonal antibody.

12. **(Withdrawn)** The method of claim 8, wherein the probe molecule or the target molecule comprises a small molecule.

13. **(Currently amended)** The method of claim 1, wherein one or more of the ~~deposited~~ layers comprises a polymeric matrix.

14. **(Withdrawn)** The method of claim 1, wherein the multi-layered structure is ~~deposited layers are~~ divided by ~~dicing or~~ laser ablation.

15. **(Withdrawn)** The method of claim 1, wherein the multi-layered structure is ~~deposited layers are~~ divided by mechanical punching.

16. (Currently amended) A method of making a plurality of microbar encoders, comprising:

dividing a multi-layered structure comprising transducing material to produce a plurality of microbar encoders, ~~The method of claim 1, wherein the deposited layers are~~ wherein said dividing is done by ~~divided using~~ photolithography.

17. (Currently amended) The method of claim 16, wherein the multi-layered structure is ~~deposited layers are~~ divided by depositing a patterned mask layer over a surface of the multi-layered structure ~~deposited layers~~, the mask layer protecting a portion of the surface of the multi-layered structure ~~deposited layers~~, and etching through an unprotected portion of the surface of the multi-layered structure ~~deposited layers~~.

18. (Currently amended) A method of making a plurality of microbar sensors comprising:

(a) making a plurality of microbar ~~encoder~~ encoders ~~by:~~ according to the method of claim 1 and

(i) producing a multi-layered structure, each layer of said structure comprising a transducing material, and

(ii) dividing the multi-layered structure into the plurality of microbar encoders, wherein the plurality of microbar encoders have a characteristic detectable signal

(b) linking a probe molecule to the plurality of microbar ~~encoder~~ encoders.

19. (Currently amended) A method of making an assembly of microbar encoders comprising:

(a) making a first plurality of microbar encoders ~~by:~~ according to the method of claim 1

(i) producing a first multi-layered structure, each layer of said first multi-layered structure comprising a transducing material, and

(ii) dividing the first multi-layered structure into the plurality of first microbar encoders

and

(b) making a second plurality of microbar encoders ~~by: according to the method of claim 1,~~

(i) producing a second multi-layered structure, each layer of said second multi-layered structure comprising a transducing material, and

(ii) dividing the second multi-layered structure into the plurality of second microbar encoders

wherein the first and second plurality of microbar encoders have different characteristic detectable signals.

20. **(Currently amended)** A method of making an assembly of microbar sensors comprising:

(a) making a first plurality of microbar sensors ~~by: according to the method of claim 18~~

(i) making a plurality of microbar encoders by:

(a) producing a first multi-layered structure, each layer of said structure comprising a transducing material, and

(b) dividing the multi-layered structure into the plurality of first microbar encoders; and

(ii) linking a probe molecule to the first plurality of microbar encoders,
and

(b) making a second plurality of microbar sensors ~~by: according to the method of claim 18,~~

(i) making a plurality of microbar encoders by:

(a) producing a second multi-layered structure, each layer of said structure comprising a transducing material, and

(b) dividing the second multi-layered structure into the plurality of second microbar encoders;

(ii) linking a probe molecule to the second plurality of microbar encoders;

wherein the first and second plurality of microbar sensors have different characteristic detectable signals.

21-25. **(Cancelled)**

26. **(New)** A method of making a plurality of microbar encoders, the microbar encoders having a characteristic detectable signal and capable of linking to a probe molecule, comprising:

- (a) producing a multi-layered structure, each layer of said structure comprising a transducing material, and
- (b) non-mechanically dividing the multi-layered structure into the plurality of microbar encoders, wherein the plurality of microbar encoders have a characteristic detectable signal.

27. **(New)** The method of claim 26, wherein said non-mechanically dividing uses photolithography.

28. **(New)** The method of claim 26, wherein said non-mechanically dividing uses ion milling.

29. **(New)** The method of claim 26, wherein said non-mechanically dividing uses laser ablation.